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10450 Stancliff Rd. Suite 210  
Houston, TX 77099  
T: +1 281 530 5656  
F: +1 281 530 5887

May 24, 2019

Lori Stone  
Cardno  
1005 W. Washburn Pl  
Saginaw, MI 48602

Work Order: **HS19051340**

Laboratory Results for: **Deer Park Fire 002 Day 19**

Dear Lori,

ALS Environmental received 1 sample(s) on May 22, 2019 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: JUMOKE.LAWAL  
Dane J. Wacasey

**Client:** Cardno  
**Project:** Deer Park Fire 002 Day 19  
**Work Order:** HS19051340

**SAMPLE SUMMARY**

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS19051340-01	WW-20190521-002-Day 19	Water		21-May-2019 11:30	22-May-2019 15:15	<input type="checkbox"/>

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**Client:** Cardno  
**Project:** Deer Park Fire 002 Day 19  
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**CASE NARRATIVE**

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**GCMS Semivolatiles by Method SW8270**

**Batch ID: 141084**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
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Client: Cardno  
Project: Deer Park Fire 002 Day 19  
Sample ID: WW-20190521-002-Day 19  
Collection Date: 21-May-2019 11:30

**ANALYTICAL REPORT**

WorkOrder:HS19051340  
Lab ID:HS19051340-01  
Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW-LEVEL SEMIVOLATILES BY 8270D</b>		<b>Method:SW8270</b>		Prep:SW3510 / 22-May-2019		Analyst: GEY	
Bis(chloromethyl)ether		U	0.00020	0.00020	mg/L	1	23-May-2019 13:21
Surr: 2-Fluorobiphenyl	112			40-125	%REC	1	23-May-2019 13:21
Surr: 4-Terphenyl-d14	110			40-135	%REC	1	23-May-2019 13:21
Surr: Nitrobenzene-d5	96.4			41-120	%REC	1	23-May-2019 13:21

Note: See Qualifiers Page for a list of qualifiers and their explanation.

WEIGHT LOG

**Client:** Cardno  
**Project:** Deer Park Fire 002 Day 19  
**WorkOrder:** HS19051340

<b>Batch ID:</b> 141084	<b>Method:</b> LOW-LEVEL SEMIVOLATILES BY 8270D	<b>Prep:</b> 3510_B_LOW
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SamplID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS19051340-01	1	1000	1 (mL)	0.001

**Client:** Cardno  
**Project:** Deer Park Fire 002 Day 19  
**WorkOrder:** HS19051340

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
<b>Batch ID</b> 141084	<b>Test Name :</b> LOW-LEVEL SEMIVOLATILES BY 8270D			<b>Matrix:</b> Water		
HS19051340-01	WW-20190521-002-Day 19	21 May 2019 11:30		22 May 2019 10:44	23 May 2019 13:21	1

Client: Cardno  
 Project: Deer Park Fire 002 Day 19  
 WorkOrder: HS19051340

## QC BATCH REPORT

Batch ID: 141084 ( 0 )		Instrument: SV-7		Method: LOW-LEVEL SEMIVOLATILES BY 8270D						
<b>MBLK</b>	Sample ID: <b>MBLK-141084</b>	Units: <b>ug/L</b>		Analysis Date: <b>22-May-2019 11:07</b>						
Client ID:	Run ID: <b>SV-7_338835</b>	SeqNo: <b>5087753</b>		PrepDate: <b>22-May-2019</b>		DF: <b>1</b>				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bis(chloromethyl)ether	U	0.20								
Surr: 2-Fluorobiphenyl	5.404	0.20	5	0	108	40 - 125				
Surr: 4-Terphenyl-d14	5.768	0.20	5	0	115	40 - 135				
Surr: Nitrobenzene-d5	5.032	0.20	5	0	101	41 - 120				

  

<b>LCS</b>	Sample ID: <b>LCS1-141084</b>	Units: <b>ug/L</b>		Analysis Date: <b>22-May-2019 14:19</b>						
Client ID:	Run ID: <b>SV-7_338835</b>	SeqNo: <b>5087759</b>		PrepDate: <b>22-May-2019</b>		DF: <b>1</b>				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bis(chloromethyl)ether	4.429	0.20	5	0	88.6	40 - 140				
Surr: 2-Fluorobiphenyl	5.192	0.20	5	0	104	40 - 125				
Surr: 4-Terphenyl-d14	5.263	0.20	5	0	105	40 - 135				
Surr: Nitrobenzene-d5	5.131	0.20	5	0	103	41 - 120				

  

<b>LCSD</b>	Sample ID: <b>LCSD1-141084</b>	Units: <b>ug/L</b>		Analysis Date: <b>22-May-2019 13:59</b>						
Client ID:	Run ID: <b>SV-7_338835</b>	SeqNo: <b>5087758</b>		PrepDate: <b>22-May-2019</b>		DF: <b>1</b>				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bis(chloromethyl)ether	4.208	0.20	5	0	84.2	40 - 140	4.429	5.13	20	
Surr: 2-Fluorobiphenyl	5.18	0.20	5	0	104	40 - 125	5.192	0.229	20	
Surr: 4-Terphenyl-d14	5.369	0.20	5	0	107	40 - 135	5.263	2	20	
Surr: Nitrobenzene-d5	5	0.20	5	0	100	41 - 120	5.131	2.59	20	

The following samples were analyzed in this batch: HS19051340-01

**Client:** Cardno  
**Project:** Deer Park Fire 002 Day 19  
**WorkOrder:** HS19051340

**QUALIFIERS,  
ACRONYMS, UNITS**

<b>Qualifier</b>	<b>Description</b>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

<b>Acronym</b>	<b>Description</b>
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

<b>Unit Reported</b>	<b>Description</b>
mg/L	Milligrams per Liter



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**CERTIFICATIONS,ACCREDITATIONS & LICENSES**

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<b>Agency</b>	<b>Number</b>	<b>Expire Date</b>
Illinois	004438	29-Jun-2019
Louisiana	03087	30-Jun-2019
Dept of Defense	ANAB L2231	20-Dec-2021
Kansas	E-10352 2018-2019	31-Jul-2019
Oklahoma	2018-156	31-Aug-2019
North Carolina	624-2019	31-Dec-2019
Maryland	343, 2018-2019	30-Jun-2019
Arkansas	19-028-0	27-Mar-2020
Texas	TX104704231-19-23	30-Apr-2020

**Client:** Cardno  
**Project:** Deer Park Fire 002 Day 19  
**Work Order:** HS19051340

**SAMPLE TRACKING**

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS19051340-01	WW-20190521-002-Day 19	Login	22/05/2019 18:21:00	NDR	EXT028

## Sample Receipt Checklist

Client Name: Cardno - Saginaw MI  
Work Order: HS19051340

Date/Time Received: **22-May-2019 15:15**  
Received by: **NDR**

Checklist completed by: Nilesh D. Ranchod 22-May-2019  
eSignature Date

Reviewed by: Dane J. Wacasey 23-May-2019  
eSignature Date

Matrices: **Water**

Carrier name: **FedEx Priority Overnight**

Shipping container/cooler in good condition?  
Custody seals intact on shipping container/cooler?  
Custody seals intact on sample bottles?  
VOA/TX1005/TX1006 Solids in hermetically sealed vials?  
Chain of custody present?  
Chain of custody signed when relinquished and received?  
Samplers name present on COC?  
Chain of custody agrees with sample labels?  
Samples in proper container/bottle?  
Sample containers intact?  
Sufficient sample volume for indicated test?  
All samples received within holding time?  
Container/Temp Blank temperature in compliance?  
Temperature(s)/Thermometer(s):  
Cooler(s)/Kit(s):  
Date/Time sample(s) sent to storage:  
Water - VOA vials have zero headspace?  
Water - pH acceptable upon receipt?  
pH adjusted?  
pH adjusted by:

Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Present <input type="checkbox"/>
Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	1 Page(s)
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	COC IDs:144331
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

3.0c U/c	IR25
Black	
5/22/19 7:00PM	

Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

Corrective Action:



Cincinnati, OH  
+1 513 733 5336

Everett, WA  
+1 425 356 2600

Fort Collins, CO  
+1 970 490 1511

Holland, MI  
+1 616 399 6070

# Chain of Custody Form

Page 1 of 1

COC ID: 144331

ALS Project Manager:

HS19051340

WV

Cardno

Deer Park Fire 002 Day 19



Customer Information				Project Information															
Purchase Order		Project Name		A	8270 bis (chloromethyl) ether														
Work Order		Project Number		B															
Company Name		Bill To Company		C															
Send Report To		Invoice Attn		D															
Address	LORI Stone 121 Continental Dr. Suite 308	Address		E															
City/State/Zip	NEWARK, DE 19713	City/State/Zip		F															
Phone	989-714-9856	Phone		G															
Fax		Fax		H															
e-Mail Address	LORI.stone@cardno.com	e-Mail Address		I															
				J															
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold		
1	WW-2040521-002-DAY 19	5-21-19	1130	WW	8	2	X												
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Sampler(s) Please Print & Sign		Shipment Method		Required Turnaround Time: (Check Box)		Results Due Date:	
C Pilla				<input type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input checked="" type="checkbox"/> Wk Days <input type="checkbox"/> 24 Hour			
Relinquished by:	Date: 5/22/19	Time: 1430	Received by:	Notes:			
Relinquished by:	Date: 5-22-19	Time: 1515	Received by:	Cooler ID	Cooler Temp	QC Package: (Check One Box Below)	
Relinquished by:	Date:	Time:	Received by:	Blank	3.0	<input type="checkbox"/> Level II Std QC <input type="checkbox"/> TRRP Checklist	
Relinquished by:	Date:	Time:	Received by:			<input type="checkbox"/> Level III Std QC/Raw Data <input type="checkbox"/> TRRP Level IV	
Relinquished by:	Date:	Time:	Received by:			<input type="checkbox"/> Level IV SW846/CLP	
Relinquished by:	Date:	Time:	Received by:			<input type="checkbox"/> Other	

Preservative Key: 1-HCl 2-HNO<sub>3</sub> 3-H<sub>2</sub>SO<sub>4</sub> 4-NaOH 5-Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> 6-NaHSO<sub>4</sub> 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.

3. The Chain of Custody is a legal document. All information must be completed accurately.

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